Hi-Fi STEREO RECEIVER
INSTRUCTION MANUAL

SANYO

JCX 2900KR

SPEAKER CONNECTIONS/LAUTSPRECHER-ANSCHLÜSSE/CONNEXIONS D'ENCEINTES

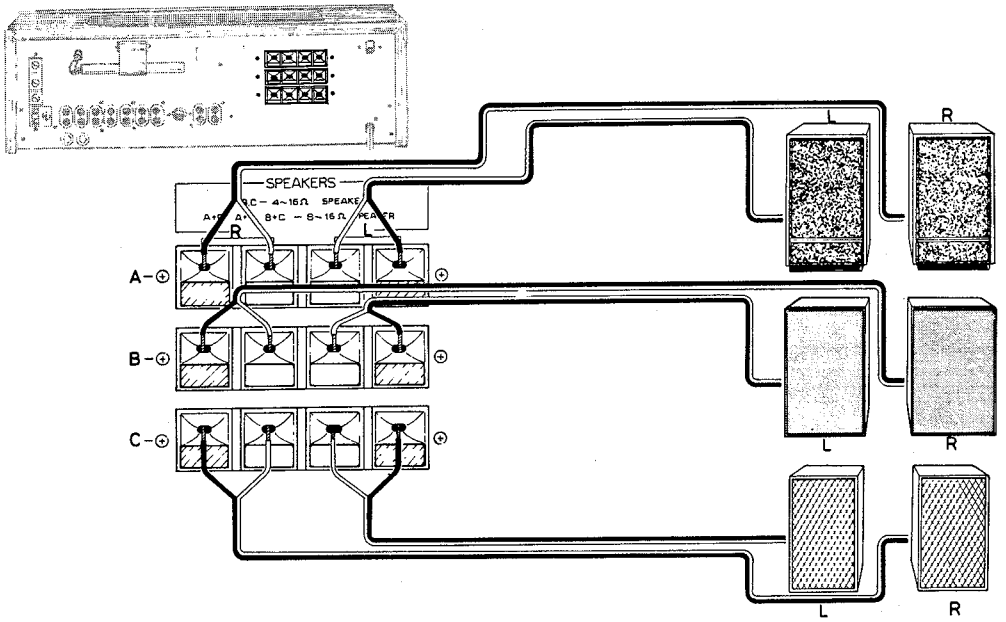


Fig. 1/Abb. 1

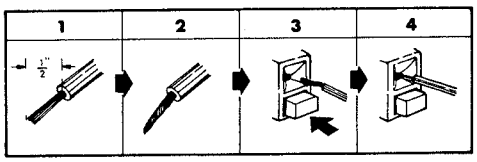
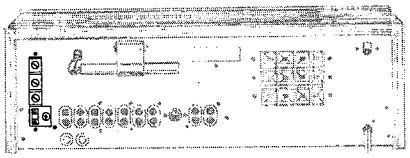


Fig. 2/Abb. 2

AERIAL/ANTENNEN/ANTENNES



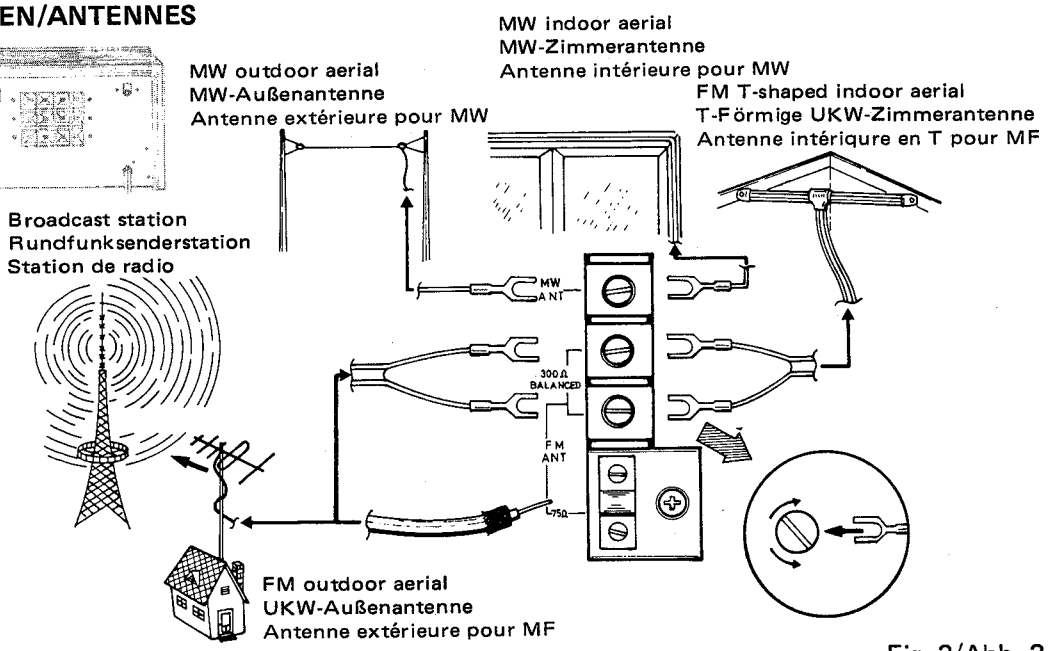
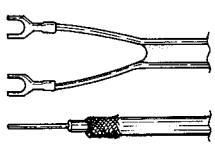


Fig. 3/Abb. 3



300-OHM TWIN LEAD
300-OHM ZWILLINGSKABEL
FIL DOUBLE 300 OHMS

75-OHM COAXIAL CABLE
75-OHM-KOAXIALKABEL
CABLE COAXIAL 75 OHMS

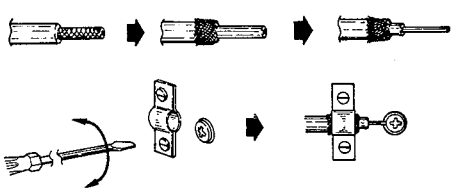


Fig. 4/Abb. 4

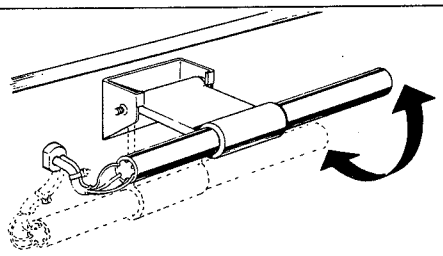


Fig. 5/Abb. 5

SOCKETS/ANSCHLUSSBUCHSEN/PRISES

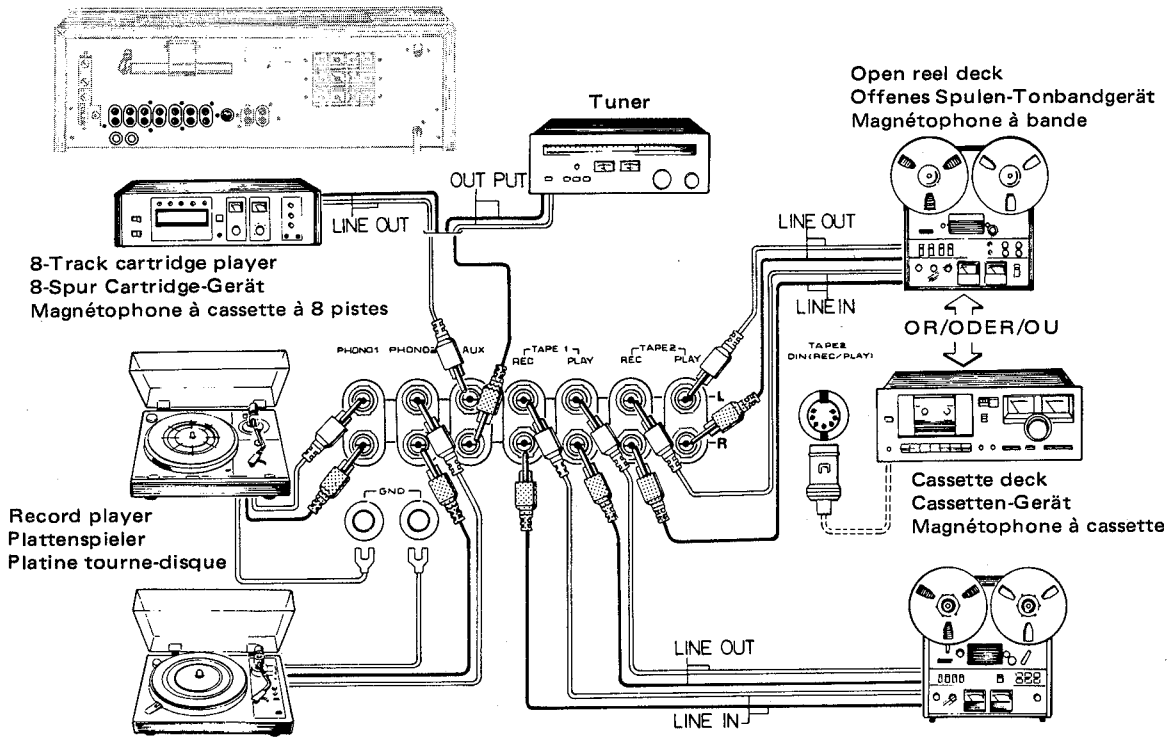


Fig. 6/Abb. 6

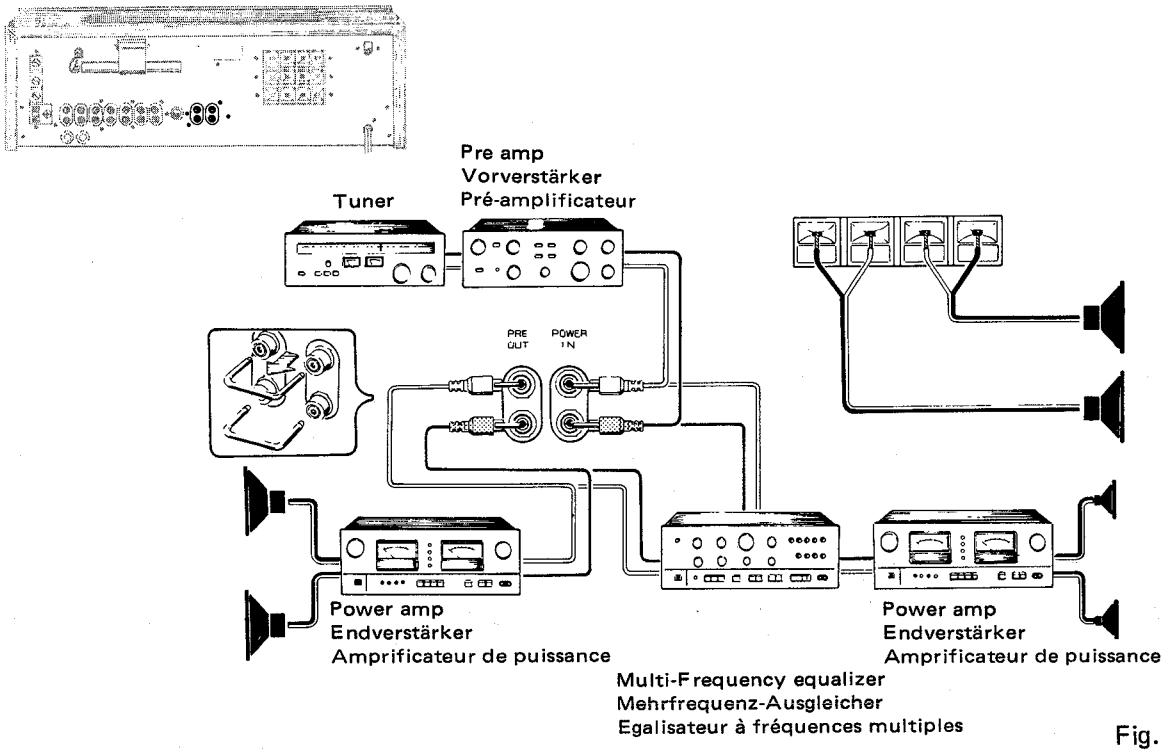


Fig. 7/Abb. 7

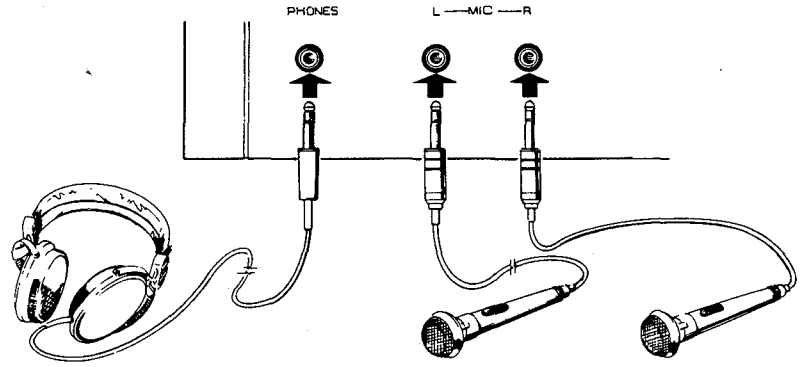
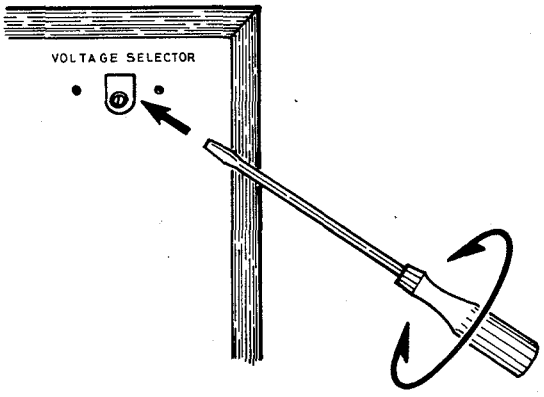


Fig. 8/Abb. 8

POWER/NETZANSCHLUSS/ALIMENTATION



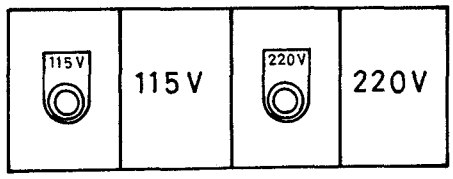


Fig. 9/Abb. 9

Tone/Klangregler/Tonalité

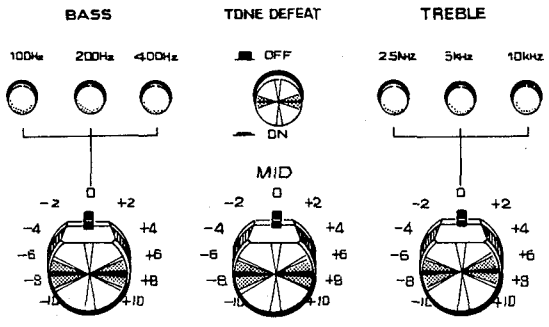


Fig. 10/Abb. 10

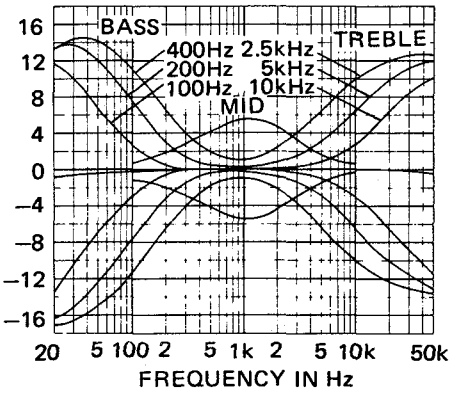


Fig. 11/Abb. 11

CONTROLS/BEDIENUNGSELEMENTE/COMMANDES

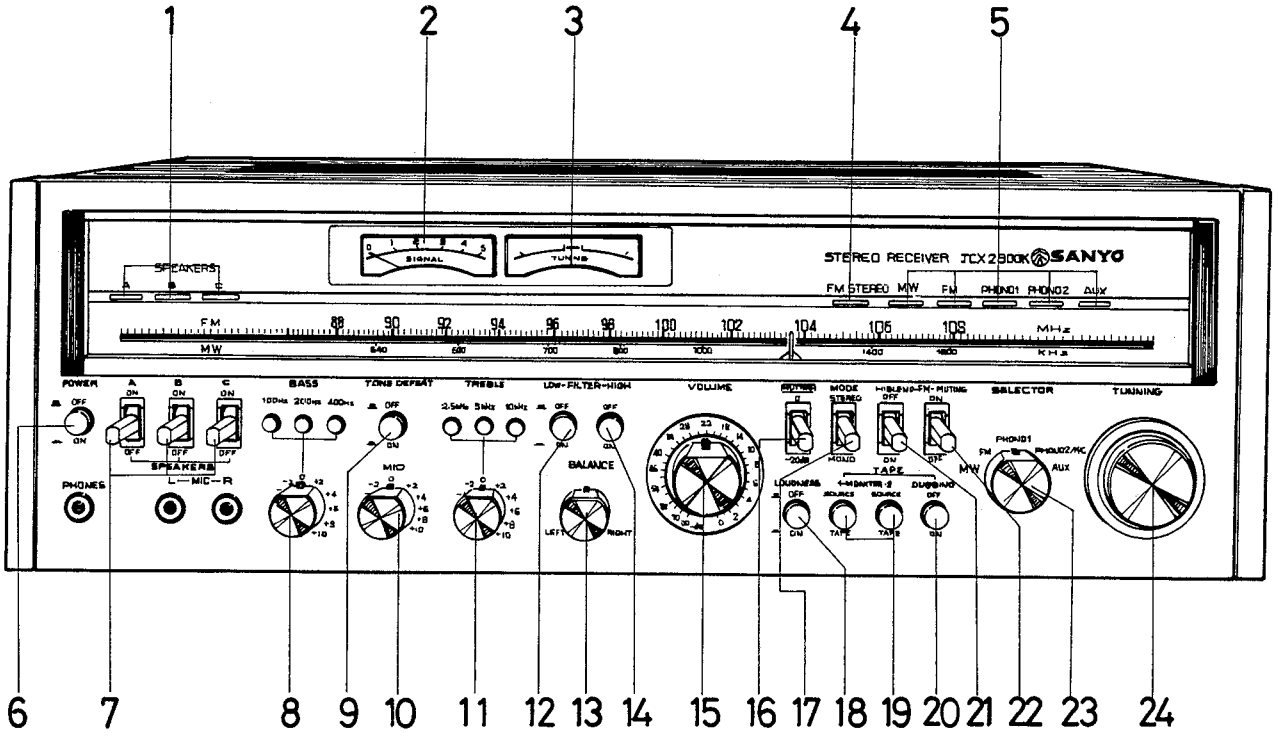


Fig. 12/Abb. 12

Meters/Anzeigen/Indicateurs

Fig. 13/Abb. 13

Duplication/Kopieren/Copiage

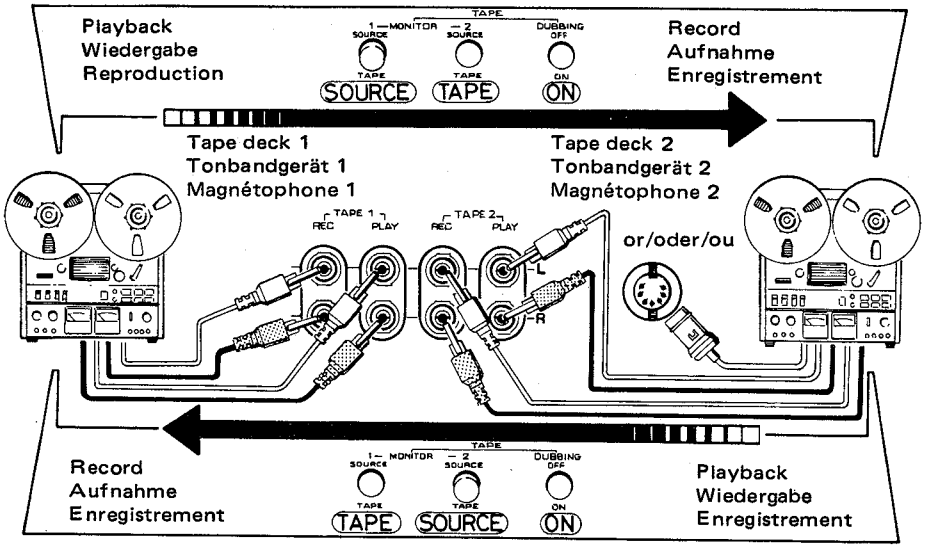


Fig. 14/Abb. 14

Earthing/Erdung/Mise à la terre

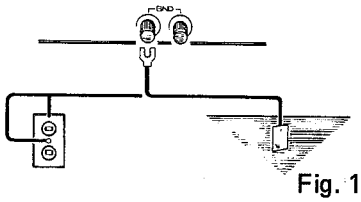


Fig. 15/Abb. 15

Hex. wrench/Sechskantschlüssel/Clef à six pans

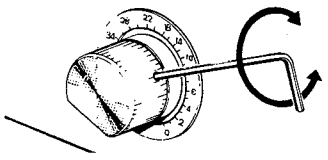


Fig. 16/Abb. 16

DESCRIPTION

The SANYO JCX 2900KR High-Fidelity Stereo Receiver is especially designed for musical entertainement with ease of operation and superior performance. Read the following operating instructions in order to experience the maximum enjoyment and versatility of this receiver.

CONNECTIONS

SPEAKER CONNECTIONS (Fig. 1)

The receiver provides terminals for three separate speaker systems. The tree speaker systems arrangement enables enjoyable reproduction in an outer room or to select whichever speaker systems are needed. The speaker terminals will accept speakers of 4 to 16 ohms impedance. If the intention is to play the two speaker systems (A and B, A and C, or B and C) simultaneously, 8 to 16 ohms impedance speakers should be employed. The speaker lead wires should be connected to the speaker terminals with the proper polarity. The red terminals are (+) positive and black terminals are (—) negative.

NOTES:

* Under wrong polarity connection, proper stereo reproduction can not be obtained.
* When the receiver is operating a long time at maximum continuous output power with a 4 ohms speaker per channel or two 8 ohms speakers in parallel per channel, the thermal fuses in the power transformers may be blown to protect the receiver from damage.
* Three speaker systems can not operate at the same time.
* The speaker lead wires should be placed as far away as possible from the external ferrite bar aerial to avoid noisy MW reception.

1. Strip off the insulation of speaker lead wire about 1/2" (12 mm) from the end (Fig. 2).
2. Twist the strands for easy connection.
3. While pushing back the button of the terminal, insert the strand into the jaw and then release.

AERIALS (Fig. 3)

To obtain satisfactory radio reception of broadcasts, suitable indoor or outdoor aerial connections are required. The outdoor aerial location is one of the most important factors for receiving broadcasts, care is required so that the place selected does not have interference or noise problems.

FM Aerial

In local areas, with the supplied T-shaped indoor aerial is sufficient to receive broadcasts. Reception in a fringe area or in a steel framed building will require an outdoor aerial, for effective, FM-stereo reception. Near a busy thoroughfare, industrial area, automotive ignition system or electrical machinery, interference noise can possibly enter through the aerial cable. To avoid interference, coaxial cable should be used instead of 300-ohm twin lead (Fig 4). It may be obtained from an electrical parts dealer and it should be connected to the 75-ohm terminals of FM ANT. The aerial cable should be as short as possible to obtain the maximum noise-free reception.

MW Aerial

In local areas, it is sufficient to receive local broadcasts with the ferrite bar aerial. Move it as shown in Fig. 5.

If the reception with the external ferrite bar aerial is unsatisfactory, an indoor or outdoor external aerial installation will be necessary. Connect insulated, flexible single-conductor wire (which may be obtained from an electrical parts dealer) to MW ANT. terminal and run it in a straight line along a non-metallic wall or under a rug for an indoor installation. If further improved reception is required, an outdoor aerial should be employed. Consult your dealer.

SOCKETS (Fig. 6)

PHONO 1 & PHONO 2

The two pairs of PHONO sockets enable the use of two stereo record players using magnetic cartridges. Your first record player should be connected to the PHONO 1 and second one to the PHONO 2 sockets. If the record player has an earth lead with spade or hook lug, connect its free end to the earth terminal. This may be effective for hum-free record playback.

NOTE:

The Moving Magnet (MM) and Induced Magnet (IM) type cartridges should be employed. Other types of cartridges such as Moving Coil (MC) type are not recommended.

AUX

These sockets are provided for futhering the versatility of the receiver with auxiliary sources, such as an 8-track cartridge player, TV sound tuner or other music source.

TAPE 1, TAPE 2 & TAPE 2 (DIN REC/PLAY)

These TAPE sockets will permit you to connect two tape decks at the same time, one to the TAPE 1 sockets and another to either TAPE 2 or TAPE 2 (DIN) sockets. A tape deck which provides DIN socket may be connected to the TAPE 2 (DIN REC/PLAY) socket. When one tape deck has been connected to the TAPE 2 (DIN) socket, another have to be connected to the TAPE 1 sockets, if desired. These sockets permits you to record from one programme source to another. Also two tape decks respectively can record simultaneously and duplicate from one tape deck to another through the receiver. Connect the REC sockets of the receiver to the LINE IN sockets of the tape deck for recording and connect the PLAY sockets of the receiver to the LINE OUT sockets of the tape deck for playback through the receiver. If your tape deck provides the DIN (REC/PLAY) socket, connect the TAPE 2 (DIN REC/PLAY) socket of the receiver to the DIN (REC/PLAY) socket of your tape deck for recording and playback through the receiver.

NOTE:

Proper stereo operation will not be obtained if the connections are wrong.

PRE OUT & POWER IN (Fig. 7)

These sockets provide furthering the ability of the receiver. Remove the two jumper plugs conjunctive between the PRE OUT and POWER IN sockets to separate the pre-amplifier and power amplifier of the receiver in turn you may use more sophisticated pre-amplifier, power amplifier, control amplifier or multi-frequency audio equalizer etc. Popular connections are shown in Fig. 7 and further more detailed connections should be followed with the instruction manual provided with your equipment.

NOTES:

* Do not place the audio lead wires near by the AC mains lead.
* When using PRE OUT sockets, be sure that the function SELECTOR switch is not set to the MW position or high frequency may be reduced slightly.

PHONES (Fig. 8)

provided for private listening with an optional stereo headphone (low impedance). The PHONES socket will accept 1/4" (6 mm) plug. For headphone listening, the speaker switches A, B & C should be set to the OFF positions if desconnection of the external speaker system is so desired. Before plugging in the headphone, the volume control should be set in the maximum counter-clockwise position to avoid damage to your ears and headphone. Adjust the listening sound level with volume control to the desired preference.

MICROPHONES (Fig. 8)

Provided for use the receiver as a public address system with one or two optional microphones (low impedance). The sockets will accept 1/4" (6 mm) plug. For stereophonic microphones operation, plug two microphones into the left and right MIC sockets and the MODE switch should be set to the STEREO position. For monophonic microphone operation, plug one microphone into the left or right MIC socket and the MODE switch should be set to the MONO position. Before plugging in the microphones, set the VOLUME control to the maximum counter-clockwise position.

POWER (Fig. 9)

Before connecting the mains lead to the house current outlet for the first time in a new area, it is absolutely neccessary to make sure the setting of the voltage selector (located on the back of the unit) corresponds as closely as possible to your local voltage. To adjust the voltage, move the voltage selector to corrrespond with your local power voltage.

Plug the attached mains lead into an AC outlet.

HELPFUL HINTS

Tone Equalizer Control System (Figs. 10 & 11)

In addition to a separate midrange control with ±5dB adjustment at 1kHz, your receiver provides a choice of three turnover frequencies for both the bass and treble controls. The 400Hz (bass) and 2.5kHz (treble) turnovers yield conventional tone control operation. The 100Hz (bass) and 10kHz (treble) positions modify only the upper and lower frequency extremes and are ideal for correcting high or low frequency response rolloff in a speaker system. The 200Hz and 5kHz turnover points provide an intermediate range of control, while a tone defeat switch gives instant "flat" response for comparison with the corrected response.

Protection Circuit

When the power is on, the sounds will not appear for several seconds. This is simply due to the protection circuit which protects speakers from possible damage. Furthermore, when the receiver is being operated in a extreme hot or ill-ventilated area, the sound will also disappear automatically by means of this amplifier protection circuit. So be sure that the receiver is always placed in cool and well-ventilated area. The sound will come on again soon after the receiver becomes cool. But if the receiver still remains inoperative, consult your local SANYO service station.

NOTE:

To avoid any shock hazards to yourself or damage to the receiver, do not attempt to remove the receiver's cabinet for repairing the receiver by yourself.

CONTROLS AND THEIR FUNCTIONS (Fig. 12)

1. Speaker indicators
   Indicates which speaker system is being used.
2. MW-FM signal meter
   Indicates receiving strength conditions of MW and FM broadcasts.
3. FM tuning meter
   Indicates FM accuracy tuning condition only. Tune in a FM station by centering pointer within the center segment of the meter.
4. FM stereo indicator
   Indicates that the FM stereo broadcast is being received.
5. Function indicators
   Indicates programme source, MW, FM, PHONO 1, PHONO 2 or AUX.
6. Power switch
   Turns on and off the power of the receiver.
7. Speaker system switches
   Speaker systems are activated by setting the switches to the ON positions. Set the speaker switch A to use the speaker system A while the switch B to the speaker system B, and the switch C to the speaker system C. The indicator will light when its speaker switch is set to the ON position. The two speaker systems can be used at the same time. There is priority with the order A, B and C. For listening with an headphone, the speaker switches should be set to the OFF positions.
8. Bass control knob and its turnover frequency switches
   Select the turnover frequency (or roll off frequency) 100, 200 or 400Hz to obtain desired bass response. Normally, keep the bass control to "0" position. Compensatation of tonal response is obtained by turning the knob clockwise (from "0" position) for emphasized bass, while turning the knob counter-clockwise (from "0" position) will de-emphasize the bass response of your sound system.
9. Tone defeat switch
   Natural sound (non-adjusted tone frequency response) is obtined by simply pushing the switch to its locked in position.
10. Mid range control knob
    Normally, keep the mid control to "0" position. Compensatation of tonal response is obtained by turning the knob clockwise (from "0" position) will emphasize mid range frequency while turning the knob counter-clockwise (from "0" position) will de-emphasize mid range frequency.

11. Treble control knob and its turnover switches
Select the turnover frequency (or roll off frequency) 2.5k, 5k or 10kHz to obtain desired treble response. Normally, keep the treble control to "0" position. Compensatation of tonal response is obtained by turning the knob clockwise (from "0" position) will emphasize treble while turning the knob counter-clockwise (from "0" position) will de-emphasize treble.
12. Low filter switch
Feedback from mag phono or rumble noise (which occured from worn record, motor of the record player or other source) appears, push the switch to attenuate this noise. Normally, set the switch in the released position.
13. Balance control knob
Adjusts the sound balance between the right and left speakers. Turning the knob clockwise will decrease the left sound while turning the knob counter-clockwise will decrease the right sound.
14. High filter switch
If scratch or hiss-noise (which are occured from worn record or other source) appears, push the switch to attenuate these noises. Normally, set the switch in the released position.
15. Volume control knob
The output sound level is indicated with "dB". Adjust the right and left output sound levels. Turning the knob clockwise will increase the output level while counter-clockwise will decrease output level. Before operating the function SELECTOR or turning on the power, the volume control should be set in the maximum counter-clockwise position to avoid damage.
16. Muting switch
For reducing the output sound temporarily and instantly set the switch to the −20dB position. The output sound will be reduced 20dB from setting volume level regardless of volume setting.
17. Mode switch
For monophonic operation, set the switch to the MONO position. The right and left sound will be mixed and reproduced from both speakers. For stereophonic operation, set the switch to the STEREO position. The right and left sound source will be separately reproduced from right and left speakers.
18. Loudness control switch
LOUDNESS control compensates the loss of high and low frequencies when listening at low volume levels. When switched on, it will emphasize lower and higher frequencies.
19. Monitor switches
For tape deck playback, set the switch to the TAPE position. The MONITOR switch has priority than the function SELECTOR. When the tape deck is connected to TAPE 1 sockets use the MONITOR-1 switch while TAPE 2 sockets to the MONITOR-2 switch.
20. Dubbing switch
For duplicating, push the switch to the ON position. When two tape deck have been connected, dubbing from TAPE 1 deck to TAPE 2 and vice versa are possible. The switch should be set to the OFF position after dubbing has been finished.
21. FM hi-blend switch
If high frequency noises are occured while FM stereo reception, set the HI-BLEND switch to the ON position. The noises are reduced considerably but separation may be slightly reduced.
22. FM muting switch
Setting the switch to the ON position (muting on) will reduce interstation noise considerably while tuning FM broadcasts. For receiving a distant or weak-signal station, set the switch to the OFF position.
23. Function selector
Select the desired programme sourse
MW
For listening to MW radio programmes.
FM
For listening to FM radio programmes.
PHONO 1
For listening to your first record player connected to the PHONO 1 sockets.
PHONO 2/MIC
For listening to your second record player connected to the PHONO 2 sockets or for using the microphones.
AUX
For listening to your equipment utilizing the AUX sockets.
24. Tuning control knob
Turn the knob for tuning in any MW or FM broadcast stations.

OPERATIONS

FM Listening

1. Turn on the power by pushing the POWER switch to its locked-in position.
2. Set the speaker switch on.
3. Set the function SELECTOR switch to the FM position. The FM indicator will light.
4. Make sure that the MONITOR switches 1 and 2 are set to the SOURCE position.
5. Set the MODE switch to the MONO or STEREO position as desired.
6. Set the FM MUTING switch to the ON position. If you intention is to tune in a distant station (weak-signal), the FM MUTING switch should be set to the OFF position.
7. Turn the TUNING control knob to tune in a desired station. The signal meter and FM tuning meter aids easy and accurate tuning. The best reception is obtained when the pointer of the signal meter deflects to the highest number and the pointer of the tuning center meter deflects within the center segment of the meter (Fig. 13). If the received station is in stereo and the MODE switch has been set to the STEREO position, the receiver will play stereophonically and the FM STEREO indicator will illuminate. But when the MODE switch has been set to the MONO position, the receiver will play monophonically. When a weak-signal station is received in stereo with high frequency noise, set the HI-BLEND switch to the ON position. If satisfactory reception is not obtained, the MODE switch should be set to the MONO position to increase the receiving condition.
8. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal quality preferences.

MW Listening

1. Turn on the power by pushing the POWER switch to its locked-in position.
2. Set the speaker switch on.
3. Set the function SELECTOR switch to the MW position. The MW indicator will light.
4. Make sure that the MONITOR switches 1 and 2 are set to the SOURCE positions.
5. Turn the TUNING control knob to tune in a desired station. The best reception is obtained when the pointer of the signal meter deflects to the highest number (Fig. 13).
6. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal preferences.

NOTE:

If these control knobs are set to maximum clockwise position, noise may occur. In this case, reduce the volume and tone.

Record Playback

NOTE:

Be sure that the microphones are disconnected from the MIC sockets when you want to play a record player connected to the PHONO 2 sockets.

1. Turn on the power by pushing the POWER switch to its locked-in position.
2. Set the speaker switch on.
3. Set the function SELECTOR switch to the PHONO 1 or PHONO 2/MIC position. The PHONO 1 or PHONO 2 indicator will light.
4. Make sure that the MONITOR switches 1 and 2 are set to the SOURCE positions.
5. Set the MODE switch to the STEREO position.
6. Place a record on the record player and operate it as instructed.
7. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal preferences.

NOTE:

The VOLUME control should be set to the maximum counter-clockwise position until stylus of your record player set on the record.

Tape Deck Operations

Playback

1. If the tape deck to be played is connected to the TAPE 1 sockets, set the MONITOR-1 switch to the TAPE position or if the tape deck is connected to the TAPE 2, set the MONITOR-2 switch to the TAPE position. Setting of the MONITOR switch to the TAPE position will make the function SELECTOR switch inoperative.
2. Turn the tape deck to playback mode.
3. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal preferences.

NOTE:

To obtain satisfactory tone quality, do not set the function SELECTOR to the MW position.

Recording

1. Set the function SELECTOR switch to your desired source that will be recorded. For preparation of recording source, make sure that the MONITOR switches 1 and 2 are set to the SOURCE positions. The output level and tone from the REC sockets or DIN socket are fixed and the VOLUME, BASS, MID and TREBLE controls will not affect the output signal.
2. Turn the tape deck to be used to the record mode.

NOTES:

* Two tape decks connected to the TAPE 1 and 2 sockets can be recorded at the same time if you required.
* For use with a 3-head type tape deck, the sound just recorded with 3-head tape deck is capable of being played back by setting the MONITOR switch to the TAPE position.

Duplication (Fig. 14)

This unit provides a duplication facility which can be performed both ways from tape deck 1 to tape deck 2 and vice versa.

1. Push the DUBBING switch to the ON position.
2. To duplicate from TAPE 1 to TAPE 2 (or TAPE 2 to TAPE 1), turn the tape deck 1 (or tape deck 2) to the playback mode, and the tape deck 2 (or tape deck 1) to the record mode. Then a duplication may be obtained.
3. Set the MONITOR-2 switch to the TAPE (or MONITOR-1 to the TAPE) position for monitoring.

NOTE:

The DUBBING switch should be set to the OFF position when you have finished.

Microphones Operation

1. Turn the VOLUME control to the maximum counter-clockwise position.
2. Plug two optional microphones into the left and right MIC sockets. This will automatically disconnect the PHONO 2 circuit.
3. Turn on the power by pushing the POWER switch to its locked-in position.
4. Set the function SELECTOR switch to the PHONO 2/MIC position.
5. Set the MODE switch to the STEREO or MONO position.
6. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal preferences.

NOTE:

Do not close the microphones to the speakers and reduce the output sound as much as possible or the howling will occur.

Auxiliary Equipment Playback

1. Set the function SELECTOR switch to the AUX position. The AUX indicator will light.
2. Set the speaker switch on.
3. Make sure that the MONITOR switches 1 and 2 are set to the SOURCE positions.
4. Adjust the VOLUME, BASS, MID and TREBLE controls for your desired sound and tonal preferences.

MAINTENANCE

* **Power Switch**
  After using the receiver, turn off the power by re-pushing the POWER switch.

* **Placing the Receiver**
  Never place the receiver in the vicinity of extreme heat such as radiator or direct sunlight and also it should not be placed in a moist environment, following this advice will result in saving the receiver from damage. Placing the receiver in a well ventilated area is strongly recommended.
  Do not put anything on the receiver.

* **Cleaning the Receiver**
  For retaining the beauty of the control panel and cabinet, simply wipe with a soft, freshly laundered cloth moistened with plain lukewarm water.

* **Earthing (Fig. 15)**
  For better performance, earth the receiver with earth wire if necessary.

* **Hex. Wrench (Fig. 16)**
  In case the VOLUME, BASS, MID, TREBLE, BALANCE or TUNING control knob comes loose, insert the supplied hex. wrench into the hole on the knob and fasten the screw securely.

SPECIFICATIONS

Power Amplifier Section

Continuous power	150 watts x 2 (at 4 ohms), 140 watts x 2 (at 8 ohms) (1% Distortion)
Total harmonic distortion	0.008% (1kHz, 120W output, 8 ohms)
Input sensitivity/Impedance	1V/50k ohms
Damping factor	60 (at 8 ohms)

Pre-Amplifier Section

Input sensitivity and impedance	
PHONO 1	2.5mV/50k ohms
PHONO 2	2.5mV/50k ohms
MIC	6.5mV/50k ohms
AUX	150mV/50k ohms
TAPE PLAY 1	150mV/50k ohms
TAPE PLAY 2	150mV/50k ohms
TAPE PLAY 2 (DIN)	150mV/50k ohms
Phono overload level	
PHONO 1/PHONO 2	150mV
Output level	
TAPE REC 1	150mV
TAPE REC 2	150mV
TAPE REC 2 (DIN)	30mV/80k ohms
PRE OUT	1V/2.2k ohms
Frequency response	
PHONO 1/PHONO 2 (RIAA 20Hz – 20kHz)	±0.2dB
AUX (20Hz – 20kHz)	±1dB
Tone control response	
BASS at 100Hz (T.O.) 400Hz	±10dB
TREBLE at 10kHz (T.O.) 2.5kHz	±10dB
MID at 1kHz	±5dB
Low filter response	30Hz (–12dB/oct.)
High filter response	8kHz (–6dB/oct.)
Loudness control response	
Volume set –30dB position at 100Hz	+10dB
Volume set –30dB position at 10kHz	+4dB
Hum and noise ratio	
PHONO 1/PHONO 2	70dB
AUX	90dB

FM Tuner Section

Frequency range	87.5 – 108MHz
Usable sensitivity (at Mono)	1.5μV
Signal-to-noise ratio	
at Mono	73dB
at Stereo	66dB
Harmonic distortion	
at Mono	0.1%
at Stereo	0.15%
Frequency response	30Hz – 15kHz (±3dB)
AM suppression (30% 400Hz AM)	60dB
Alternate channel selectivity	55dB (DIN)
Capture ratio	1.0dB
Stereo separation at 1kHz	46dB
Aerial input	300 ohms balanced 75 ohms unbalanced

MW Tuner Section

Frequency range	510 – 1605kHz
Sensitivity	280μV/m
Signal-to-noise ratio	46dB
Image rejection	55dB
IF rejection	64dB
Aerial	External ferrite bar aerial

General

Power requirements	AC: 115/220V, 50Hz
Power consumption	700W
Dimensions	21-11/32" W x 7-3/8" H x 18-9/16" D (540 x 186 x 470 mm)
Weight	Approx. 51 lbs. 14 ozs. (23.5kg)

* Specifications are subject to change without notice.